



1651

Patent  
Attorney Docket: 302,670-10  
(prev. 265/082)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

**Mark M. Wang et al.**

Serial No.: 09/993,318

Filed: November 14, 2001

For: Method for Separation of Particles  
(As Amended)

Group Art Unit: 1651

Examiner: Jon P. Weber

AMENDMENT TRANSMITTAL

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

RECEIVED  
SEP 30 2003  
TECH CENTER 1000/0000

Sir:

Transmitted herewith is an Amendment for the above-identified application.

- ☐ Applicant(s) petitions for an extension of time under 37 CFR § 1.136 [fees: 37 CFR § 1.17(a)(1)-(5)] for the total number of months checked below:

EXTENSION (months)		FEE FOR SMALL ENTITY		FEE FOR OTHER THAN SMALL ENTITY
1 month	<input type="checkbox"/>	\$55.00	<input type="checkbox"/>	\$110.00
2 months	<input type="checkbox"/>	\$205.00	<input type="checkbox"/>	\$410.00
3 months	<input type="checkbox"/>	\$465.00	<input type="checkbox"/>	\$930.00
4 months	<input type="checkbox"/>	\$725.00	<input type="checkbox"/>	\$1,440.00
5 months	<input type="checkbox"/>	\$985.00	<input type="checkbox"/>	\$1,970.00

- ☒ No extension fee is believed due at this time. However, if the Commissioner deems otherwise, please consider this a petition therefor.

CERTIFICATE OF MAILING  
(37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, Alexandria, VA 20231.

Date of Deposit  
IR1:1048079.1

9/26/03

Denise N. Doss

Denise N. Doss

**FEES FOR CLAIMS:**

☒ Applicant claims small entity status pursuant to 37 CFR 1.27.

The fees for claims (37 CFR § 1.16(b)-(d)) have been calculated as shown below

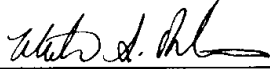
	Currently Pending		Previously Paid for		Additional Claims		Fees	Totals
Total Claims	15	-	24	=	0	x	\$18.00	0
Independent Claims	2	-	3	=	0	x	\$84.00	0
Multiple Dependent Claims	\$28 0		(if applicable)				<input type="checkbox"/>	0
<b>TOTAL OF ABOVE CALCULATIONS</b>								0
Reduction by ½ for Filing by Small Entity. Note 37 CFR §§ 1.9, 1.27, 1.28.							<input checked="" type="checkbox"/>	0
<b>TOTAL FEES FOR CLAIMS SUBMITTED HEREWITH</b>								0

☐ A check in the amount of \$\_\_\_\_\_ is enclosed herewith

☒ The Commissioner is authorized to charge O'Melveny & Myers' Deposit Account No. **500639** for any fees required under 37 CFR §§ 1.16 and 1.17 that are not covered, in whole or in part, by any check enclosed herewith and to credit any overpayments to said Deposit Account **500639**.

Respectfully submitted,

O'MELVENY & MYERS LLP

By:   
Michael S. Davidson  
Reg. No. 43,577  
Attorneys for Applicant

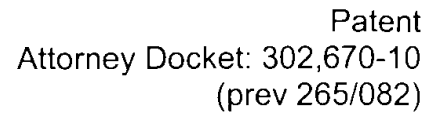
Dated: 9/26/03

MSD/dnd

Customer No.  
**34263**

PATENT TRADEMARK OFFICE

O'Melveny & Myers LLP  
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Group Art Unit: 1651

Examiner: Jon P. Weber

Serial No.: 09/993,318

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For: Method for Separation of Particles  
(As Amended)

## AMENDMENT/RESPONSE TO RESTRICTION REQUIREMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Prior to examination of the above-identified Application on the merits, please amend the application as follows:

**Amendments to the Specification** are shown on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 3 of this paper.

**Remarks** begin on page 8 of this paper.

CERTIFICATE OF MAILING  
(37 C.F.R. §1.8a)

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Date of Deposit

Denise Doss

Name of Person Mailing Paper

Signature of Person Mailing Paper

**AMENDMENTS TO THE SPECIFICATION:**

On page 1, line 1 of the specification, please delete the Title of the Invention and insert the following replacement Title of the Invention:

--METHOD FOR SEPARATION OF PARTICLES--

**AMENDMENTS TO THE CLAIMS:**

The listing of claims shown below will replace all prior versions, and listings, of claims in the Application:

1. (Original) A method for separating particles comprising the steps of:

flowing the particles within a first constrained path, the first constrained path having an input and an output, and a sorting region, the sorting region coupling to a second constrained path, the second constrained path including an output,

illuminating the sorting region with a moving optical gradient,

characterized in that certain of the particles flow in a laminar manner between the first inlet and the output of the first constrained path, and

selected particles are diverted from the first constrained path to the second constrained path under the force of the moving optical gradient.

2. (Original) The method of claim 1 wherein the constrained path is a channel.

3. (Original) The method of claim 1 wherein the constrained path is a plane.

4. (Original) The method of claim 1 wherein the sorting region comprises a T intersection.

5. (Original) The method of claim 1 wherein the sorting region comprises a H intersection.

6. (Original) The method of claim 1 wherein the sorting region comprises a X intersection.

7. (Original) The method of claim 1 wherein the sorting region comprises a Y intersection.

8. (Original) The method of claim 2 wherein the channel is a microchannel.

9. (Original) The method of claim 8 wherein the microchannel is formed in a substrate.

10. (Original) The method of claim 8 wherein the microchannel is formed on a substrate.

11-24. (Cancelled)

25. (New) A method of separating particles comprising the steps of:

providing a substrate having a main channel coupled to an output channel and at least one sorting channel, the main channel including a sorting region;

providing a light source, the light source producing a moving optical gradient in the sorting region of the main channel;

flowing a fluidic medium within the main channel, the fluidic medium containing particles; and

wherein a portion of the particles flow from the main channel to the outlet channel and a selected portion of the particles are diverted to the at least one sorting channel by the moving optical gradient.

26. (New) The method of claim 25, wherein the moving optical gradient does not fully trap the particles.

27. (New) The method of claim 25, wherein the light source is a laser.

28. (New) The method of claim 25, wherein the particles are cells.

29. (New) The method of claim 25, wherein the particles are sorted based on their dielectric constants.

**REMARKS**

In response to the Restriction Requirement mailed on September 16, 2003, Applicants, without traverse, elect to prosecute claims 1-10 (Group I). Claims 11-24 are cancelled. In addition, Applicants have added new claims 25-29. The newly added claims are consistent with the election of the method claims made herein. Finally, Applicants have amended the Title of the Invention in light of the currently pending method claims. If there are any questions concerning this paper, please contact the undersigned at (949) 737-2926.

Respectfully submitted,

O'MELVENY & MYERS LLP

Dated: 9/26/03

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IR1:1047886.1